

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Masaki OKAMURA

Attn: PCT Branch

Application No. New U.S. National Stage of PCT/JP2004/007469

Filed: December 9, 2005

Docket No.: 126235

For: VOLTAGE CONVERSION DEVICE AND COMPUTER-READABLE
RECORDING MEDIUM HAVING PROGRAM RECORDED THEREON FOR
COMPUTER TO CONTROL VOLTAGE CONVERSION

**SUBMISSION OF THE ANNEXES TO THE
INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Attached hereto is the annexes to the International Preliminary Report on
Patentability (Form PCT/IPEA/409). The attached material replaces the claims.

Respectfully submitted,



James A. Oliff
Registration No. 27,075

Eric D. Morehouse
Registration No. 38,565

JAO:EDM/emt

Date: December 9, 2005

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

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CLAIMS

1. (Amended) A voltage conversion device (12, 13, 30) converting a DC voltage from a DC power supply into an output voltage in such a manner that said output voltage is equal to a first target voltage, comprising:

a voltage converter (12) changing a voltage level of said DC voltage to output said output voltage;

detection means (13) detecting said output voltage output from said voltage converter (12); and

control means (30) conducting feedback control of said voltage converter (12) in the manner that said output voltage is equal to said first target voltage, said feedback control conducted, in a case where a first deviation between said first target voltage and said detected output voltage is larger than a predetermined value, by changing a second target voltage of said voltage converter (12) in such a manner that a second deviation between said second target voltage and said output voltage decreases, wherein

said control means (30) controls said voltage converter (12), in a case where said detected output voltage decreases below said first target voltage, so that said output voltage is equal to said first target voltage by conducting first feedback control and second feedback control,

said first feedback control refers to feedback control of said voltage converter (12) executed by changing said second target voltage in such a manner that said second deviation is at most said predetermined value, and

said second feedback control refers to feedback control of said voltage converter (12) executed, in a case where said detected output voltage having been decreasing starts to increase, by changing said second target voltage in such a manner that the rate of change of said second target voltage is at most a standard value.

2. (Canceled)

3. (Amended) The voltage conversion device according to claim 1, wherein
in the case where said first deviation is larger than said predetermined value, said
control means (30) conducts said first feedback control using said second target voltage
determined by adding said predetermined value to said detected output voltage.

4. (Amended) The voltage conversion device according to claims 1 or 3,
wherein
said output voltage is input to an inverter (14) driving an AC motor (M1).

5. The voltage conversion device according to claim 4, wherein
said AC motor (M1) is a motor for a vehicle.

6. (Amended) A computer-readable recording medium having a program
recorded thereon for a computer to control voltage conversion from a DC voltage from
a DC power supply into an output voltage in such a manner that said output voltage is
equal to a first target voltage, said computer executing:
a first step of detecting said output voltage; and
a second step of conducting feedback control of a voltage converter (12)
converting said DC voltage into said output voltage, said feedback control conducted, in
a case where a first deviation between said first target voltage and said detected output
voltage is larger than a predetermined value, by changing a second target voltage of said
voltage converter (12) in such a manner that a second deviation between said second
target voltage and said output voltage decreases, wherein
said second step includes:
a first sub-step of calculating said first deviation;
a second sub-step of detecting that said first deviation is larger than said
predetermined value;

a third sub-step of conducting feedback control of said voltage converter (12) by changing said second target voltage in such a manner that said second deviation is at most said predetermined value; and

5 a fourth sub-step of conducting feedback control of said voltage converter (12), in a case where said detected output voltage having been decreasing starts to increase, by changing said second target voltage in such a manner that the rate of change of said second target voltage is at most a standard value.

7. (Canceled)

10 8. (Amended) The computer-readable recording medium according to claim 6, wherein

said third sub-step includes the steps of:

15 calculating said second target voltage by adding said predetermined value to said detected output voltage; and

conducting feedback control of said voltage converter (12) using said calculated second target voltage.

20 9. (Amended) The computer-readable recording medium according to claim 6 or 8, wherein

said fourth sub-step includes the steps of:

detecting that said output voltage having been decreasing starts to increase;

calculating a difference between a third target voltage at a first control timing and a fourth target voltage at a second control timing preceding said first control timing;

25 comparing said difference with said standard value;

calculating said third target voltage, in a case where said difference is larger than said standard value, by adding said standard value to said fourth target voltage;

calculating said third target voltage, in a case where said difference is at most

said standard value, by adding said predetermined value to said detected output voltage;
and

conducting feedback control of said voltage converter (12) using said calculated
third target voltage.